

Question #1 of 56

Question ID: 439512

Positive convexity in bond prices implies all but which of the following statements?

- A) As yields decrease, changes in yield have a larger effect on bond prices.
- B) The price volatility of non-callable bonds is inversely related to the level of market yields.
- C) As yields increase, changes in yield have a smaller effect on bond prices.
- D) Bond prices approach a ceiling as interest rates fall.

Question #2 of 56

Question ID: 439466

For a given bond and yield, the dollar value of a one basis point change in yield is typically:

- A) greater for a yield increase.
- B) unrelated to the bonds convexity.
- C) equal for a yield increase and decrease.
- D) greater for a yield decrease.

Question #3 of 56

Question ID: 439510

Consider two bonds, A and B. Both bonds are presently selling at par. Each pays interest of \$120 annually. Bond A will mature in 5 years while bond B will mature in 6 years. If the yields to maturity on the two bonds change from 12 percent to 10 percent, both bonds will:

- A) increase in value, but bond A will increase more than bond B.
- B) decrease in value, but bond B will decrease more than bond A.
- C) decrease in value, but bond A will decrease more than bond B.
- D) increase in value, but bond B will increase more than bond A.

Question #4 of 56

Question ID: 439511

Convexity is important because:

- A) it can be used to indicate the optimal hedge ratio.
- B) it measures the volatility of non-callable bonds.
- C) the slope of the callable bond price/yield curve is backward bending at high interest rates.
- D) the slope of the price yield curve is not linear.

Question #5 of 56

Question ID: 439486

When calculating duration, which of the following bonds would an investor *least likely* use effective duration on rather than modified duration?

- A) Callable bond.
 - B) Option-free bond.
 - C) Puttable bond.
 - D) Convertible bond.
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Question #6 of 56

Question ID: 439475

Which of the following statements about duration is **FALSE**?

- A) Price volatility has a direct relationship with interest rate risk.
 - B) The numerator of the effective duration formula assumes that market rates increase and decrease by the same number of basis points.
 - C) For a specific bond, the effective duration formula results in a value of 8.80%. For a 50 basis point change in yield, the approximate change in price of the bond would be 4.40%.
 - D) Effective duration is the exact change in price due to a 100 basis point change in rates.
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Question #7 of 56

Question ID: 439494

How does the convexity of a bond influence the yield on the bond? All else the same, for a bond with high convexity investors will require:

- A) the same yield as for a low convexity bond.
 - B) a higher yield.
 - C) a higher or lower yield depending on the bond's duration.
 - D) a lower yield.
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Question #8 of 56

Question ID: 439500

Suppose you have a two-security portfolio containing bonds A and B. The book value of bond A is \$20 and the market value is \$35. The book value of bond B is \$40 and the market value is \$50. The duration of bond A is 4.7 and the duration of bond B is 5.9. Which of the following amounts is *closest* to the duration of the portfolio?

- A) 5.5.
- B) 5.3.
- C) 5.4.
- D) 5.6.

Question #9 of 56

Question ID: 439469

For a 20-year, \$1,000 par value, 6 percent coupon T-bond yielding 5 percent, the dollar value of a basis point (DV01) and associated percentage price change (PPC) are *closest* to:

- A) \$1.37 and 0.12%.
 - B) \$2.45 and 0.20%.
 - C) \$0.14 and 0.01%.
 - D) \$0.57 and 0.06%.
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Question #10 of 56

Question ID: 439497

Which of the following statements describe a property of bond convexity? Convexity:

- I. increases as yields increase.
- II. increases with the square of maturity.
- III. measures the rate of change in duration.
- IV. increases if the coupon on a bond is increased.

- A) II and III only.
 - B) I and III only.
 - C) II and IV only.
 - D) III and IV only.
-

Question #11 of 56

Question ID: 439482

A 10-year, 11 percent annual coupon bond with \$100 par value currently yields 9 percent. What is the duration of the bond given a 50 basis point change in yield?

- A) 6.95 years.
 - B) 7.27 years.
 - C) 4.80 years.
 - D) 6.19 years.
-

Question #12 of 56

Question ID: 439518

Positive convexity means that:

- A) the graph of a callable bond flattens out as the market value approaches the call price.
- B) as interest rates change, bond prices will increase at an increasing rate and decrease at a decreasing rate.
- C) the price of a fixed-coupon bond is inversely related to changes in interest rates.

D) bond price sensitivity is lowest when market yields are low.

Question #13 of 56

Question ID: 439496

Why is convexity a good thing for a bond holder? Because when compared to a low convexity bonds a high convexity bond:

- A) has improved estimation of price changes.
 - B) has better price changes regardless of the direction of the yield change.
 - C) is usually underpriced.
 - D) is more sensitive to interest rate changes, increasing the potential payoff.
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Question #14 of 56

Question ID: 439499

Suppose you have a three-security portfolio containing bonds A, B and C. The effective portfolio duration is 5.9. The market values of bonds A, B and C are \$60, \$25 and \$80, respectively. The durations of bonds A and C are 4.2 and 6.2, respectively. Which of the following amounts is *closest* to the duration of bond B?

- A) 9.0.
 - B) 7.4.
 - C) 7.1.
 - D) 1.4.
-

Question #15 of 56

Question ID: 439495

Convexity is *more important* when rates are:

- A) high.
 - B) unstable.
 - C) depends on whether the note is selling at a premium or a discount.
 - D) low.
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Question #16 of 56

Question ID: 439517

Jayce Arnold, a CFA candidate, is studying how the market yield environment affects bond prices. She considers a \$1,000 face value, option-free bond issued at par. Which of the following statements about the bond's dollar price behavior is *most likely* accurate when yields rise and fall by 200 basis points, respectively? Price will:

- A) decrease by \$149, price will increase by \$124.
- B) increase by \$149, price will decrease by \$124.
- C) increase by \$124, price will decrease by \$149.

D) decrease by \$124, price will increase by \$149.

Question #17 of 56

Question ID: 439515

Which of the following statements *best* describes the concept of negative convexity in bond prices? As interest rates:

- A) rise, the bond's price decreases at a decreasing rate.
 - B) rise, the bond's price approaches a minimum value.
 - C) fall, the bond's price increases at a decreasing rate.
 - D) fall, the bond's price increases at an increasing rate.
-

Question #18 of 56

Question ID: 439483

The *most commonly* used measure of interest-rate risk is:

- A) yield.
 - B) maturity.
 - C) duration.
 - D) coupon.
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Question #19 of 56

Question ID: 439465

The price value of a basis point for a 7% coupon, semiannual pay, 10-year bond with a \$1,000 par value, currently trading at par, is *closest* to:

- A) \$33.55.
 - B) \$0.71.
 - C) \$1.42.
 - D) \$67.10.
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Question #20 of 56

Question ID: 439508

The convexity of a U.S Treasury bond is usually:

- A) negative.
 - B) zero.
 - C) positive.
 - D) additional information is required.
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Question #21 of 56

Question ID: 439480

A 12-year, 5 percent semiannual coupon bond with \$100 par value currently yields 8.00 percent. What is the duration of the bond given a 100 basis point increase and decrease in yield?

- A) 7.80.
 - B) 12.56.
 - C) 8.38.
 - D) 16.78.
-

Question #22 of 56

Question ID: 439506

How does the price-yield relationship for a callable bond compare to the same relationship for an option-free bond? The price-yield relationship is:

- A) the same for both bond types.
 - B) concave for an option-free bond and convex for a callable bond.
 - C) concave for low yields for the callable bond and always convex for the option-free bond.
 - D) concave for the callable bond and convex for an option-free bond.
-

Question #23 of 56

Question ID: 439521

Immunization is the process of offsetting the effects of interest-rate changes on the value of assets and liabilities. Coverage of liabilities with significant convexity may be more effectively matched with a:

- A) bullet portfolio with little convexity.
 - B) mortgage portfolio, especially in a highly volatile rate environment.
 - C) barbell portfolio with positive convexity.
 - D) callable bond portfolio, especially in a declining-rate environment.
-

Question #24 of 56

Question ID: 439476

Vijay Ranjin, CFA, is a portfolio manager with Golson Investment Group. He manages a fixed-coupon bond portfolio with a face value of \$120.75 million and a current market value of \$116.46 million. Golson's economics department has forecast that interest rates are going to change by 50 basis points. Based on this forecast, Ranjin estimates that the portfolio's value will increase by \$2.12 million if interest rates fall and will decrease by \$2.07 million if interest rates rise. Which of the following choices is *closest* to the portfolio's effective duration?

- A) 2.9
 - B) 3.6
 - C) 4.3
 - D) 0.4
-

Question #25 of 56

Question ID: 439485

The goal of computing effective duration is to get a:

- A) preliminary estimate of Macaulay duration.
 - B) preliminary estimate of modified duration.
 - C) more accurate measure of the bond's price sensitivity when embedded options exist.
 - D) measure of duration that is effectively constant for the life of the bond.
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Question #26 of 56

Question ID: 439513

Non-callable bond prices go up faster than they go down. This is referred to as:

- A) positive convexity.
 - B) negative convexity.
 - C) inverse features.
 - D) embedded benefits.
-

Question #27 of 56

Question ID: 439520

Evaluated at the same yield, the investment that is expected to have the greatest convexity is a:

- A) portfolio with a duration of 10 that contains a 5-year zero-coupon bond and a 15-year zero-coupon bond.
 - B) 6% coupon bond of 10-year duration.
 - C) 10-year zero-coupon bond.
 - D) callable 6% coupon bond of 10-year duration.
-

Question #28 of 56

Question ID: 439501

Which of the following statements about portfolio duration is **FALSE**? It is:

- A) the weighted average of the duration estimates of the securities in the portfolio.
 - B) a simple average of the duration estimates of the securities in the portfolio.
 - C) measured using market prices of the bonds.
 - D) a measure of interest rate risk.
-

Question #29 of 56

Question ID: 439507

Which of the following is *most* accurate about a bond with positive convexity?

- A) Price increases when yields drop are greater than price decreases when yields rise by the same amount.
 - B) Positive changes in yield lead to positive changes in price.
 - C) Price changes are the same for both increases and decreases in yields.
 - D) Price increases and decreases at a faster rate than the change in yield.
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Question #30 of 56

Question ID: 439492

For a given change in yields, the difference between the actual change in a bond's price and that predicted using the duration measure will be greater for:

- A) inverse convexity.
 - B) a bond with less convexity.
 - C) a short-term bond.
 - D) a bond with greater convexity.
-

Question #31 of 56

Question ID: 439514

Negative convexity for a callable bond is *most likely* to be important when the:

- A) S&P or Moody's rating on the bond falls.
 - B) bond is first issued.
 - C) price of the bond approaches the call price.
 - D) market interest rate rises above the bond's coupon rate.
-

Question #32 of 56

Question ID: 439464

Interest rate risk is *most* commonly associated with:

- A) futures market.
- B) fixed income instruments.
- C) equity market.

D) commodity market.

Questions #33-35 of 56

June Klein, CFA, manages a \$200 million (market value) U.S. government bond portfolio for a large institution. Klein anticipates a small, parallel shift in the yield curve of 10 basis points and wants to fully hedge the portfolio against any such change. Klein would like to use the T-bond futures contract to implement the hedge. She tabulates some essential information about her portfolio and the corresponding futures contract. The results are shown in Table 1.

Table 1: Portfolio and Treasury Bond Futures Contract Characteristics

Value of Portfolio:	\$100,000,000
Duration of Portfolio:	8.88438
Mar-00 Futures:	94.15625
Settlement Date:	02/17/00
Final Delivery Date:	03/31/00
First Delivery Date:	03/01/00

Klein is not as comfortable with the T-bond futures contract as she would like to be. Consequently, she decides to familiarize herself with the characteristics of the futures contract and its associated delivery process. She collects all of the deliverable bonds for the futures contract. This information is shown in Table 2. Klein will test her understanding using the highlighted bond in Table 2. The price value of a basis point (PVBP) are per \$1 million par value.

Table 2: Treasury Bonds Deliverable for T-Bond Futures Contract

Coupon	Maturity or first call date	Price (flat)	Accrued interest	YTM/YTC	PVBP \$ per million par	Duration	Conversion factor	Cost of delivery
10.000%	11/15/15	133 24/32	2.5824	6.534%	1211.2284		1.1759	23.0331

Klein's broker supplies the characteristics of the Treasury bond that is currently the cheapest-to-deliver bond. These are shown in Table 3.

Table 3: Cheapest-to-Deliver Treasury Bond

Coupon	Maturity or first call date	Price (flat)	Accrued interest	YTM/YTC	PVBP \$ per million par	Duration	Conversion factor	Cost of delivery
13.250%	11/15/17	135.4375	3.4217	9.166%	1110.0814	7.99429	1.4899	-4.8502

Question #33 of 56

Question ID: 439472

Klein wants to compute the interest rate sensitivity of the highlighted bond in Table 2. She assumes that the yield increases by one basis point. How much, per \$1 million par position, will the value of this bond change (to the nearest dollar)?

- A) -\$1,211.
- B) -\$121,123.
- C) \$121,123.
- D) -\$12.

Question #34 of 56

Question ID: 439473

Using the information in Table 2, Klein would like to compute the duration of the highlighted bond. Which is the *closest* to Klein's answer?

- A) 8.88.
- B) 9.06.
- C) 12.11.
- D) 10.54.

Question #35 of 56

Question ID: 439474

Klein would like to quantify the approximate value loss of her portfolio from an increase in yields according to her expectations. Using the information in Table 1 which of the following is the *closest* to Klein's answer?

- A) -\$1,211,228.
 - B) \$8,884.
 - C) -\$888,438.
 - D) -\$8,884.
-

Question #36 of 56

Question ID: 439493

With respect to an option-free bond, when interest-rate changes are large, the duration measure will overestimate the:

- A) final bond price from a given increase in interest rates.
 - B) increase in a bond's price from a given increase in interest rates.
 - C) fall in a bond's price from a given increase in interest rates.
 - D) associated change in the bond's rating.
-

Question #37 of 56

Question ID: 439519

Which of the following statements regarding convexity, barbell portfolios, and bullet portfolios is *least* accurate?

- I. The convexity of shorter-term coupon bonds is generally greater than the convexity of longer-term coupon bonds.
- II. A barbell strategy will tend to have greater convexity than a bullet strategy.
- III. Bullet and barbell strategies may have the same duration.

- A) I only.
 - B) III only.
 - C) I and II.
 - D) II and III.
-

Question #38 of 56

Question ID: 439516

Which of the following bonds may have *negative* convexity:

- A) High yield bonds.
 - B) All of these choices are correct.
 - C) Callable bonds.
 - D) Mortgage backed securities.
-

Question #39 of 56

Question ID: 439477

Duration of a bond can be defined as the:

- A) sensitivity of the value of the bond to a change in maturity.
 - B) sensitivity of the value of the bond to a change in the value of market portfolio.
 - C) sensitivity of the value of the bond to a change in interest rates.
 - D) weighted-average maturity of a bond portfolio.
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Question #40 of 56

Question ID: 439470

The price value of a basis point (PVBP) for a 18 year, 8 percent annual pay bond with a par value of \$1,000 and yield of 9 percent is *closest* to:

- A) \$0.44.
 - B) \$0.82.
 - C) \$0.80.
 - D) \$0.63.
-

Question #41 of 56

Question ID: 439509

Which of the following bonds bears the *greatest* price impact if its yield declines by one percent? A bond with:

- A) 10-year maturity and selling at 100.
 - B) 30-year maturity and selling at 100.
 - C) 30-year maturity and selling at 70.
 - D) 10-year maturity and selling at 70.
-

Question #42 of 56

Question ID: 439467

The price value of a basis point (PVBP) of a bond is \$0.75. If the yield on the bond goes up by 1 bps, the price of the bond will:

- A) decline by \$0.75.

- B) is less volatile than a bond with a PBVP of \$0.50.
 - C) increase or decrease by \$0.75.
 - D) increase by \$0.75.
-

Question #43 of 56

Question ID: 439484

When compared to modified duration, effective duration:

- A) factors in how embedded options will change expected cash flows.
 - B) places less weight on recent changes in the bond's ratings.
 - C) is equal to modified duration for callable bonds but not putable bonds.
 - D) places more weight on recent changes in the bond's ratings.
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Question #44 of 56

Question ID: 439503

Negative convexity is *most likely* to be observed in:

- A) zero coupon bonds.
 - B) callable bonds.
 - C) treasury bonds.
 - D) municipal bonds.
-

Question #45 of 56

Question ID: 439468

The price value of a basis point (PVBP) for a 7-year, 10 percent semiannual pay bond with a par value of \$1,000 and yield of 6 percent is *closest* to:

- A) \$0.92.
 - B) \$0.64.
 - C) \$0.00.
 - D) \$0.28.
-

Question #46 of 56

Question ID: 439504

Can a fixed income security have a negative convexity?

- A) No.
 - B) Need more information to answer question.
 - C) Yes, but only when the price yield curve is linear.
 - D) Yes.
-

Question #47 of 56

Question ID: 439478

A 12-year, 8 percent annual coupon bond with \$100 par value currently sells at par. The bond is callable at 102. What is the effective duration of the bond assuming interest rates change by 100 basis points?

- A) 5.85.
 - B) 7.55.
 - C) 10.50.
 - D) 4.58.
-

Questions #48-50 of 56

A 10-year maturity Treasury bond has a par value of \$10,000 and a 5 percent coupon. The yield on the bond is 4.5 percent. Assume that the yield can fall to 4.45 percent or rise to 4.55 percent.

Question #48 of 56

Question ID: 439489

The effective duration for the bond is closest to:

- A) 7.61.
- B) 7.24.
- C) 8.07.
- D) 7.86.

Question #49 of 56

Question ID: 439490

The effective convexity of the bond is closest to:

- A) 38.46.
- B) 19.23.
- C) 57.69.
- D) 76.93.

Question #50 of 56

Question ID: 439491

Given your answers to the two prior questions, the percentage price change associated with a 20-basis-point increase in yield is closest to a:

- A) decrease of 1.56%.
- B) decrease of 1.58%.

- C) decrease of 1.54%.
 - D) decrease of 1.60%.
-

Question #51 of 56

Question ID: 439505

How does the price-yield relationship for a puttable bond compare to the same relationship for an option-free bond? The price-yield relationship is:

- A) more convex for a puttable bond than for an option-free bond.
 - B) more convex at some yields for the puttable bond than for the option-free bond.
 - C) the same for both bond types.
 - D) concave for an option-free bond and convex for a puttable bond.
-

Question #52 of 56

Question ID: 439487

A major problem with the use of duration in interest rate risk management is that it assumes:

- A) a nonlinear relationship between prices and rates.
 - B) differential sensitivity of assets and liabilities to changes in interest rates.
 - C) an inverse relationship between prices and rates.
 - D) only a single change in interest rates over the planning horizon.
-

Question #53 of 56

Question ID: 439481

A bond with an 8% semi-annual coupon and 10-year maturity is currently priced at \$904.52 to yield 9.5%. If the yield declines to 9%, the bond's price will increase to \$934.96, and if the yield increases to 10%, the bond's price will decrease to \$875.38. Estimate the percentage price change for a 100 basis point change in rates.

- A) 6.58%.
 - B) 8.41%.
 - C) 4.35%.
 - D) 2.13%.
-

Question #54 of 56

Question ID: 439498

If a 12-year, 8 percent annual coupon bond with \$100 par value is currently selling at par what is the convexity of the bond?

- A) 100.5.
- B) 98.0.
- C) 78.0.

D) 57.0.

Question #55 of 56

Question ID: 439502

A bond portfolio consists of a AAA bond, a AA bond, and an A bond. The prices of the bonds are \$1,050, \$1,000, and \$950 respectively. The durations are 8, 6, and 4 respectively. What is the duration of the portfolio?

- A) 6.67.
 - B) 6.00.
 - C) 6.07.
 - D) 18.20.
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Question #56 of 56

Question ID: 439479

Which of the following statements regarding duration is **FALSE**?

- A) Duration is a measure of percentage change in price for a given change in yield.
- B) Duration is unitless.
- C) Other things equal, duration of a coupon bond is higher when the bond's YTM is lower.
- D) Duration of a portfolio of bonds is equal to the market value weighted average of the duration of individual bonds in the portfolio.